ISLAMIC EDUCATION MODEL FOR PREPARING GENERATIONS IN THE INDUSTRIAL REVOLUTION 4.0 AT UNIVERSITAS AL AZHAR INDONESIA (UAI)

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Abstract

The Industrial Revolution 4.0, encourages university, lecturers, and students to be based on digital technology. The rapid development of technology today has made the world more narrow and globalized, thus making life competition between individuals and groups increasingly stringent. This situation allegedly can lead to the bending of religious values, individual personalities, and the morality of a nation's society. This era requires quality education, which not only fills in the cognitive aspects, but also requires the formation of personality and character aspects. One of them through Islamic education is gradually instilled in humans, so as leading to the recognition of God. Islamic religious education plays an important role in controlling the power of industry 4.0 through higher education di Universitas Al Azhar Indonesia (UAI). The result of this research is that Islamic epistemology and scientific education at university becomes active, because the education functions to conduct behavioral experiences through teaching-learning, training and exemplary processes, which are in accordance with the ethics of religious education.

***Keywords*:** Islamic education, interdisciplinary subjects, curriculum

1. INTRODUCTION

The rise and fall of a nation-state depend on the amount of education it receives. Thus, the development of the industrial revolution era 4.0 now is a challenge for the current educational environment, including Islamic Education. The complexity of the challenges began the industrial revolution 4.0, which is completely automatic digital, based on artificial intelligence like a robot. The education field is not static, but instead, it is constantly evolving (Ajmain et al, 2019). The impacts and importance of Industrial Revolution 4.0 is a current trend of automation and digitalization are reflected in all aspects of our lives (Hariharasudan & Kot, 2018). According to Maria Clavert in article *Industry 4.0 Implications For Higher Education Institutions,* there are two main approaches that educational systems may take towards Industry 4.0: educating followers or change

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makers. Followers have the right skill set for reacting to the changes in their working environment, adapting their performance, and learning to cope with the technological development.

Education that is supposed to be a pioneer of improvement as well as the formation of national character, is often threatened with total failure in shaping the nation's character. Although threatened with failure, education is still the most effective means of shaping the true character of the Indonesian nation. Other than to intensifying the education transformation, the fact that the world has moved rapidly in term of the innovation in various forms and aspects including in the education world should be taken a serious action (Ajmain et al, 2019).

When dealing with the era of the industrial revolution 4.0, it needs to be understood so as not to make someone a robot. It is precisely what technology expects to improve human well-being. The position of technology is only an instrument for humans. Thus, the epistemology of science based on the industrial revolution 4.0 aims to prepare a generation that will prosper life-based on technology.

Universitas Al Azhar Indonesia (UAI) was established in 2000 and designed to carry out a vision; developing excellent persons who have intellectual capability based on Islamic spiritual, moral and ethical values. The management team has committed to bringing this University with the mission; to improve quality of education, research, and public services by applying enterprising university's principles, to tighten partnership with relevant domestic and international institutions, to apply universal Islamic values in character building (Moenawar, 2016).

European Parliamentary Research Service mentions that revolution industry happened four times. *The first,* industrial revolution took place in England in 1784 where the discovery steam engines and mechanization began to replace human work. *The second*, revolution took place at the end of the century the 19th where production machines are powered by electricity used for production activities mass. *The third,* use of computer technology for automation manufacturing began in 1970 to be a sign of revolution. *The forth,* the rapid development of sensor technology, interconnection, and data analysis gave rise to the idea of integrating throughout technology into various industrial fields (Davies, 2015). The term Industry 4.0 itself was officially announced at Germany precisely when the Hannover Fair was held in 2011 (Kagermann et al, 2013).

In the theses of secularism, modern humans put religion away from the public sphere, and put forward the rational aspect. This mindset considers religion to be incompatible with science. Though the thesis has an error. In the epistemology of Islam, the holy book of the Quran praises those who think (Ali ‘Imran [3]: 190), including the mastery of science and technology.

Therefore, the Industrial Revolution 4.0 does not need to be considered a threat to the teachings of religion (Islamic Education), also on the contrary religion is not a threat to the Industrial 4.0 revolution. It is important to stressing the importance of integrated science and technology with religion. Science must be based on religious values so as not to be destructive of human values (dehumanization). Whereas religious teachings must coincide with the context of modernity, so that they are compatible with all times and places.

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However, what must be understood for us is the emergence of disruptive innovation that gives rise to new conditions that cannot be predicted, disrupts or damage the existing order of values.

UAI also reach its mission with *The University's Seven Fundamental Elements (7FE),* as a venue toward student professional development and character building, as bellow: *Islamic Values, Leadership, Entrepreneurial Skill, Partnership, Managerial Skill, Information Technology* and *Foreign Language.* The 7E was designed to become a distinctive identity of UAI with a competitive advantage, which is to comparative advantage was developed by the YPI Al Azhar foundation (Moenawar, 2016).

But, Industrial Revolution Era 4.0 did not have a simple impact on education. This era is marked by the increasingly central role of cyber technology in the academic world of education. So it has emerged in the world of education the term Islamic Education 4.0 is a phenomenon that responds to the need for a fourth industrial revolution where humans and machines are aligned to get solutions, solve problems and of course discover new possibilities for innovation.

There are at least two meanings that can be extracted from the terminology of Islamic Education. First, education about Islam, secondly education according to Islam. The first terminology sees Islam more as a subject matter in education, while the second terminology makes Islam more perspective in Islamic education (Djazaman, 2009: 90).

Islamic Education has been widely understood in the first sense, so that the concept of Islamic Education is more oriented to the material, curriculum, and methods of how a teacher conveys Islamic Education material to students. If Islamic Education is understood in the first sense, then the process that occurs is the "transfer of Islamic values" from the older generation to the younger generation without having to create conditions that make students think creatively and progressively.

Islamic Education is understood with the second concept, then it will not view Islam as a set of values that is part of the education system, but instead views education as a process that is part of the Islamic life system. Therefore, it means that Islam is not a subject that must be taught to students, but Islam is more the soul of education itself, thus, Islam means having concepts about education.

Nevertheless, in this global era, Islamic Education cannot be separated from problems that arise. Then how does Islamic Higher Education deal with this revolution? How does he take advantage of existing opportunities and at the same time respond to challenges and overcome obstacles that are not simple? This paper tries to look at the dynamics of Islamic Education in the Era Industrial Revolution 4.0 and at the same time maps Islamic discourse at Universitas Al Azhar Indonesia.

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2. RESEARCH METHODS

This paper used a qualitative descriptive method. Qualitative research is a type of study that is not applying statistical procedures or other methods of measurement relating to the processing of data quantification (Cresswell, 1998). The qualitative descriptive method is intended to sharpen the data obtained to obtain objective and rational generalization to decide what appropriate strategic steps to describe the impact of Islamic Education at Universitas Al Azhar Indonesia (UAI). This research refers to the method of literature study by collecting data research from various sources to be analyzed to produce findings that are useful for Islamic universities in the face of the industrial revolution 4.0. The literature analysis was used to identify and analyzed the Islamic Education concept and its implementation in the UAI institutional.

Researchers consider this topic to be very important to be discussed in the present, with a discussion about UAI provide generation students for the era industrial revolution 4.0, it is expected that university will increasingly exist in Indonesia to produce graduates who are qualified in science and technology as well as qualified in Islamic values. It started by strengthening scientific Islamic Education subject.

Whereas according to Daulay (2009) Islamic Education is recognized as being in the education system which is divided into three aspects. *First,* Islamic Education as an institution recognizes the existence of Islamic education institutions explicitly. *Secondly,* Islamic Education as a Subject is the recognition of religious education as one of the compulsory subjects given at the elementary to tertiary level. *Third,* Islamic Education as a value, namely the discovery of Islamic values in the education system.

3. DISCUSSION

Islamic Education Model at UAI institutions toward Industrial Revolution 4.0

In education discourses, there are three of terminology that are often used to refer to Islamic education as a whole which is contained in the connotation of the terms *tarbiyah, ta'lim, ta'dib,* which are used simultaneously (Al-Attas, 1980). The term tarbiyah in Arabic, or education in English derived from the Latin *educare* according to Al-Attas is not appropriate if intended for the term education. In the context of character building of human education, Al-Attas stressed the meaning of education should lead to the term *ta'dib,* which is the recognition that is gradually instilled in human beings, to lead towards the recognition of God in the order of existence and personality

In line with Azyumardi Azra's opinion which states that the teaching process in education today, only meets the cognitive aspects, but does not fill the aspects of personality and character formation. Therefore, he offers several directions for the reconstruction of Islamic education, one of which is to re- formulate the meaning of education and express agreement with the concept of *ta'dib* (Azra, 2002). The area of Islamic Education in UAI is on three subjects,

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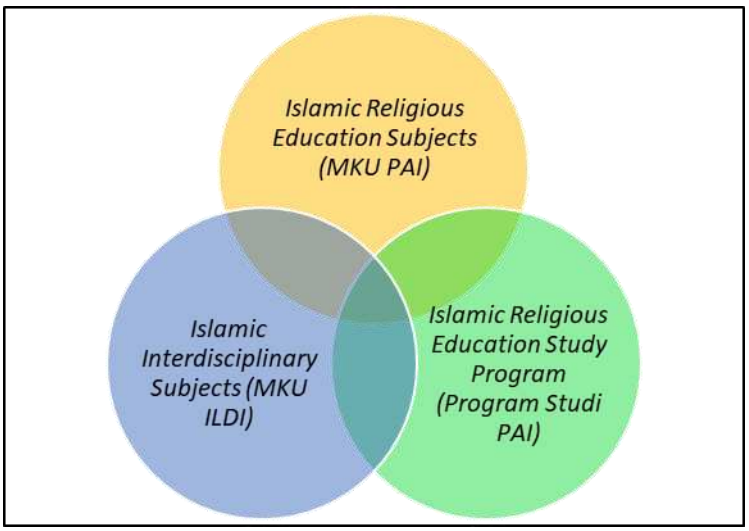
namely *Islamic Religious Education Subjects*, *Islamic Interdisciplinary Subjects,* and *Islamic Religious Education Study Program*), as shown below:

Figure 1
Typologies of Islamic Education Curriculum in UAI



Islamic Religious Education Subjects

Religious education in tertiary institutions becomes an obligation that must be present in the curriculum. The National Education System Law No. 20/2003 article 37 paragraph (2), it states that the undergraduate education curriculum must include the following subjects: (1) religious education, (2) citizenship education, and (3) language. This is intended so that the output reaches the target of the national education goal of making Indonesian people excellent, both physically and mentally. The final results achieved are human beings, perfect humans from all sides, namely cognitive, affective and psychomotor.

Incorporating religious sciences into public education institutions is a positive thing that has implications for eliminating the dichotomy between religious education and general education (Azra, 2002). Islamic education courses are not an obligation in Islamic-based tertiary institutions such as UAI.

Islamic Education Courses are seen as vital elements in the education system in Higher Education. Strengthening the current PAI course is an urgent matter to do given the various developments in science and technology and the rapid flow of information (Mastuhu, 2002). It is in this framework that the strengthening of the PAI course as an alternative is offered to improve the quality of quality to form a superior student personality (Abbas, 2002).

Contextual Islamic Religious Education is no longer repetition of ritual aspects but rather serves as a pointer to the development of science. The PAI discourse at UAI is as follows, The Concept of God in Islam, Human Nature according to Islam; Ethics and Morals; Science and Technology and Art in Islam; and Law, Human Rights and Democracy in Islam (Djamas et al, 2008).

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Also, Islamic religious education courses are very urgent because of their teachings concerning the creed *(aqidah)*, sharia *(syariah)* and morals *(akhlak)*. These three dimensions become the most important things in Islamic teachings and are the essence of Islamic teachings, both contained in the Qur'an and Hadith of the Prophet Muhammad. Every Muslim is obliged to know and understand it as a foothold in living his life.

The planning and implementation of PAI are carried out by the coordinator of the *General Course-Center for Integration of Islamic Thought* (MKU-PII). Expectations for such PAI to be more efficient and provide relevance to the life of the nation and state and have actual values. At UAI Islamic religious education courses are included in the General Courses (MKU) category. Its existence must be followed by all UAI students from all study programs (Prodi) in each faculty with a minimum passing grade obtaining a score of B. The number of the semester credit system (SKS) of Islamic religious education courses totaling 3 credits is taken in 1 semester.

In the learning process required supporting facilities to help students obtain maximum learning goals. The facilities needed for PAI courses are places of worship, libraries containing Islamic-based literature, Al-Qur'an and Hadits learning media, religious laboratories and others.

Islamic Interdisciplinary Subjects (MKU ILDI)

Indonesia had promulgated Law No. 12 of 2012 on Higher Education in which it was stipulated in the Article 10 that science could be distinguished into six groups, the first group being religious sciences, the second humanities, the third social sciences, the fourth natural sciences, the fifth normal sciences like mathematics, and the sixth applied sciences. Although this classification is somewhat different from that UNESCO, and probably also politically motivated, the issue remains that each typology has its own characteristics that has some repercussions on its vulnerability to values (Mudzhar, 2018). A question may arise now as to where is the place of Islamic studies; are they part of the natural sciences, the humanities, or social sciences?

Islamic Interdisciplinary Subjects (in Indonesian *Islam Lintas Disiplin Ilmu: ILDI*) is an Islamic studies-based course that must be followed by all UAI students. This subject is placed as a compulsory university course because it is one of the uniqueness of UAI which was born from the Masjid Agung Al Azhar and naturally makes Islamic values as a benchmark in the development of science. According to Djamas and Purnama (2019), the purpose of this course is to build a scientific mindset based on Islamic scientific thought. The Islamic scientific mindset was developed to explore and discover the truth of God's revelation from the verses of Kauniyah in the al-Quran with modern scientific approaches in various scientific disciplines.

The theories of science that developed in the modern world began and were mostly generated from Western civilization with a scientific paradigm that was detached from its attachment to God's authority. While the paradigm of Islamic scientific thought, despite placing humans as the main actors in the excavation,

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development and utilization of science, it remains in the corridor of Divine authority (theo-anthropocentric). Islamic scientific thought is based on the theological belief that God is the Creator who is the main source of knowledge revealed to humans through verses qauliyah-quraniyah, and through his creation in the universe (ayat kauniyah) which are the objects of science (Djamas and Shah, 2015).

Science happens to crystallize experience that can be expressed through reality objectively (empirically) or subjectively (essence). Western modern science is formed based on empirical facts alone, regardless of its source, namely God, which has provided the essence of various sciences as contained in the Koran. Empirical can be known by objective reason (ratio), while the essence is subjective reasoning (intellect). The combination of ratio with intellect produces actual knowledge because the ratio can be understood only utilizing scientific analysis, while the intellect can know the essence (Saefuddin, 2010). The meeting point between the two poles of scientific thought is the focus of Islamic integration in the MKU Interdisciplinary Islamic Integration of Science which is considered sufficient in preparing the Islamic generation to face the Industrial Revolution 4.0.

The lecture process is carried out through methods that are *student-centered learning*, in the form of learning that is focused on students as the subject of the learner, while the lecturer acts more as a facilitator by guiding students during the learning process. In addition, the lecture approach is carried out using *contextual learning methods and problem based learning* (Djamas and Purnama, 2019). This method is intended so that students have the skills to explore the power of creativity in solving problems in life in their environment related to lecture material. This method is considered suitable to be developed in the current era and especially the industrial revolution.

Islamic Religious Education Study Program (Program Studi PAI)

The revitalization of Islamic education in the 21st century is a necessity. Changes that will quickly have a long impact and require a rapid response also in the field of education, especially Islamic education. The response to change involves the philosophy of education, curriculum, institutions, management, human resources, and learning methods. All of these responses also undoubtedly make progressive Islamic education (Azra, 2002).

In this context, according to Azra, subjects of Islamic religious education, especially at the faculty or study program level, need to be revitalized. There have been many criticisms of Islamic Religious Education (PAI) both in terms of a substance containing studies that are not very relevant and often overlap between one level of education with another.

Islamic Religious Education Study Program (PAI) is a characteristic of UAI including having a curriculum that supports the *huffaz* (memorizers of Qur'an), has students who master English and Arabic. Surely this is adjusting to global developments to continue to exist in the modern era. So that the PAI study

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program is expected to produce outputs of human resources who can understand and master science, technology and global demands.

Islamic Religious Education Study Program UAI was established in 2000 and adapts itself to global developments so that it exists in the modern era. The presence of the PAI study program is expected to produce outputs of human resources capable of mastering science, technology and global demands. To realize the revitalization, expertise is needed to equip students with various competencies, namely mastery of the field of study, scientific foundation, educational activities and its application strategies in the field. Structured preparation of the implementation of learning in the PAI Study Program through the main component, namely the availability of the learning curriculum.

In facing the challenges of the industrial revolution 4.0, the output of the PAI Study Program professionally covers three areas; First, it produces educators who have the knowledge, attitudes, skills and values needed in the latest educational institutions. Second, produce graduates who can manage, plan, supervise, and develop innovative Islamic religious education unit programs. Third, produce additional graduates as counselors and instructors of Islamic Education in schools and families; Overseas educators; Educational trainer; Management of educational institutions; Hajj ritual guide; Community's socio- religious leader; Journalist; Education entrepreneur; and Preacher (Profile, 2019).

4. CONCLUSION

The Industrial Revolution 4.0, encourages university, lecturers and students to be based on digital technology. At present it can be seen that the academic system in UAI has been digitally based, the lecturers and students can access academic by online, such as in making learning subject and entering grades. Lecturers have also done a lot of innovations in the learning system by developing innovative and creative models and learning media that are no longer monotonous, so the students can understand the subject presented.

Based on the explanation above, the Industrial Revolution 4.0 need not be considered a threat to religion. Also on the contrary religion is not a threat to the Industrial Revolution 4.0. In this connection it is necessary to emphasize the importance of efforts to harmonize science and technology *(Iptek)* with religion *(Imtaq).* Science and technology *(Iptek)* must always be based on moral-religious values so as not to be destructive of human values (dehumanization). While religious teachings must be brought closer to the context of modernity, so that they can be compatible with all times and places.

The combination of religious and scientific education (integrative) at UAI becomes active, because education functions to conduct behavioral experiences through teaching-learning, training and exemplary processes, which are in accordance with the ethics of religious education. The area of Islamic Education in UAI is on three subjects, namely (1) *Islamic Education Subjects*, (2) *Islamic Interdisciplinary Subjects* and (3) *Islamic Education Study Program*.

Graduates from the UAI model of Islamic education will have insight values, namely the practice of science *(ilmu amaliah),* because the essence of

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having knowledge is practice. And this graduate has also an insight into scientific practice *(amal ilmiah)*, because his practice is based on science. In this case, the campus will synthesize with the community according to the times.

The 4.0 digital revolution in education brings hope to job opportunities for UAI students. This has an effect on campus licensing based on mosques and having an enterprising university vision. Namely, a character and appearance campus that suits Islamic personality and the demands of human life's needs. The campus is an arena for scientists or scholars (various disciplines), in formulating the direction of comprehensive social change, and is supported by advances in science, technology, the global economy, and Islamic ethics.

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